



Manufacturers of Custom Welding Lines for Resale  
www.selectrode.com

# SELECTRODE 1119 Gold 312(29/9)

## INTERNATIONAL CLASSIFICATIONS

**AWS/ASME A 5.4 E 312-17\***

**EN 1600: E 29.9 R 32**

**DIN 8556: E 29.9 R 23**

**ISO 3581: E 29.9 R 32**

**NFA 81-343: EZ 29.9 R 23**

**\*Proprietary Modification**

## FEATURES & APPLICATIONS

Due to exceptional strength and crack resistance, it is ideal for repairing tools, dies, spring steel and any dissimilar metal combinations, except for the aluminum and copper alloys. It is also recommended for repairing worn parts and as an underlay for hardfacing.

The ultimate electrode for welding all types of steels, without any danger of cracking or breakage. Special "FERRITE BALANCED" Chemistry also serves as a "STUD PULL" electrode

- An engineered deposit chemistry that has the perfect ratio of metallics to offer crack resistance far superior to any other brand.
- All colors are usually kept in stock unmarked.
- Special flux formulation eliminates slag interference in horizontal fillets.
- Slag is designed to turn to powder making this electrode ideal for "STUD PULL" applications.
- Available in TIG form as product code 6007 and in MIG form as product code 7007

**\* Special specification exceeding chemistry for extreme crack resistance.**

## ALL WELD METAL ANALYSIS (TYPICAL WEIGHT %)

**Microstructure:** A duplex austenite/delta ferrite structure with a Shaefler ferrite value below 35%.

Code	Color	312-17*	312-16
1119	Gold	X	
1124	White	X	
1145	Blue		X
1147	Red	X	
1149	Maroon		X
1150	Orange		X
1153	Blue	X	
1154	White		X
1157	Green	X	
1187	Green		X

**Flux Color:**

Type	Cu	C	Mn	Cr	Si	S	Ni	P	Mo	Fe
312-17*	Special Proprietary Non-Conforming Chemistry									
312-16	.06	.1	.8	29	1	.01	9	.02	.7	Bal

## TYPICAL MECHANICAL PROPERTIES

Undiluted Weld Metal	Maximum Value Up to:
Tensile strength as welded	128,000 psi (880 MPa)
Work hardened	186,000 psi (1282 MPa)
Elongation	32%, 36% 17 coatings
Reduction of area	25%
Impact Energy	50J: 68°F (20°C)
Hardness	Brinell 225

## WELDING CURRENT & INSTRUCTIONS

**Recommended Current:** DC reverse polarity (Electrode +) or AC

Diameter (mm)	1/16 (1.6)	5/64 (2.0)	3/32 (2.5)	1/8 (3.25)	5/32 (4.0)	3/16 (5.0)
Minimum Amperage	25	30	35	60	75	130
Maximum Amperage	35	55	70	110	140	200

**Welding Techniques:** The area in which the weld is to be made should be free of rust, grease, paint and other materials which cause weld contamination. A 90° vee joint should be used when joining heavy sections. Maintain a short arc length and use stringer beads.

**Welding Positions:** Flat, Horizontal, Vertical up, Overhead

**Deposition Rates:**

Diameter (mm)	Length (mm)	Weldmetal/ Electrode	Electrodes per lb (kg) of Weldmetal	Arc Time of Deposition min/ lb (kg)	Amperage Settings	Recovery Rate
1/16 (1.6)	12" (300)	.13oz (4g)	120 (264)	59 (129)	25	100%
5/64 (2.0)	12" (300)	.14oz (4g)	114 (251)	47 (103)	40	100%
3/32 (2.5)	12" (300)	.38 oz. (11g)	40 (88)	37 (82)	65	100%
1/8 (3.25)	14" (350)	.64oz (18g)	25 (55)	26 (58)	100	100%
5/32 (4.0)	14" (350)	1oz (28g)	16 (36)	21 (46)	130	100%
3/16 (5.0)	14" (350)	1.6oz (45g)	10 (23)	14 (30)	170	100%

### APPROXIMATE ELECTRODE PACKAGING & DIMENSIONS

Diameter (mm)	1/16 (1.6)	5/64 (2.0)	3/32 (2.5)	1/8 (3.25)	5/32 (4.0)	3/16 (5.0)
Length (mm)	12" (300)	12" (300)	12" (300)	14" (350)	14" (350)	14" (350)
Electrodes / lb	54	42	26	14	9	7
Electrodes / kg	119	92	58	31	20	15